REMARKS

A.   Introduction

Applicant respectfully requests reconsideration and allowance of this application. Claims 1-16 are pending in the application. Applicant submits that this application is in condition for allowance, and Applicant earnestly requests such action. Below, Applicant addresses each of the Examiner's rejections.

B.   102(e) Rejection of Claims 11-15 Over Ford

In the Office Action mailed October 11, 2006 ("Office Action"), the Examiner rejected Claims 11-15 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,963,867 to Ford, et al. ("Ford"). (Office Action at 2.) Applicant respectfully submits that each of these claims is allowable over Ford.

As discussed during the Examiner interview, the anticipation rejections of Claims 11-15 based on Ford are improper. Ford does not disclose several limitations of independent Claim 11, including but not limited to "dividing said total amount of credit by the number of ancestor nodes of the selected item to determine an amount of credit per ancestor to be distributed for the selection event." The Examiner asserts that this limitation is disclosed in Ford at col. 22, ll. 49-57. (Office Action at 3.) Applicant respectfully disagrees. The disclosure in Ford relied on by the Examiner does not involve determining credit in response to a selection event. Nor does the cited disclosure (or any other teaching in Ford) involve distributing credit to ancestor nodes of a selected item. Rather, the disclosure relied on by the Examiner teaches determining a category popularity score (associated with a category) by taking the mean value of popularity scores associated with "top-level result items" associated with the category. Thus, in this embodiment of Ford, if there are four top-level result items associated with a particular category having item popularity scores IP1, IP2, IP3, and IP4, the category popularity score is calculated as (IP1+IP2+IP3+IP4)/4. These top-level result items do not correspond to the ancestor nodes of the present invention.

Claims 12-15 each depend directly from independent Claim 11 and are not anticipated by Ford for at least the same reasons as provided above for Claim 11. Accordingly, Applicant respectfully requests that the Examiner withdraw the anticipation rejections of Claims 11-15 based on Ford.

B.   <u>103(a) Rejection of Claims 1-10 and 15-16 Over Ortega In View Of Herz</u>

In the Office Action mailed October 11, 2006 ("Office Action"), the Examiner rejected Claims 1-10 and 15-16 under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,606,619 to Ortega, et al. ("Ortega") in view of U.S. Patent No. 6,460,036 to Herz ("Herz"). (Office Action at 4.) Applicant respectfully submits that each of these claims is allowable over the combination of Ortega and Herz.

1.   <u>Rejection of Claims 1-10</u>

The obviousness rejections of Claims 1-10 based on the applied references Ortega and Herz are improper because that combination of references does not disclose or suggest each and every limitation of those claims.

Regarding Claim 1, the Examiner concedes that Ortega does not teach "evaluating differences between the individual user history scores and the collective user history scores to generate a relative preference profile for the user, wherein the relative preference profile comprises relative preference scores for specific item categories, said relative preference scores reflecting a degree to which the user's predicted affinity for a category differs from the predicted affinity of the user population for that category." (Office Action at 4.) However, the Examiner asserts that this limitation is taught by Herz at Figure 12 (reference 1205), and at col. 18, ll. 49-55 and col. 19, l. 17 – col. 20, l. 55. Applicant respectfully disagrees.

Herz teaches methods for assessing a user's interest in target objects. Importantly, Herz makes a distinction between target objects that the user has actually evaluated and target objects that the user has had no opportunity to evaluate. For target objects that have been evaluated by the user, Herz teaches the use of *"relevance feedback,"* which assesses the user's interest based on "active" and "passive" feedback from the user. In "active" feedback, the user evaluates the object and explicitly indicates his or her interest in that object (e.g., by rating it on a numerical scale). (Herz at col. 17, ll. 39-43.) In "passive" feedback, the system of Herz infers the user's interest from the user's behavior (e.g., by viewing the object on a web page). (Herz at col. 17, ll. 43-58.) Through the use of this active and/or passive relevance feedback, the system of Herz directly determines the user's interest in the evaluated objects.

For target objects for which the user has had no opportunity to evaluate, there is no relevance feedback, and the system of Herz necessarily uses a different, and far more

complicated, approach. For an unevaluated target object, Herz estimates the user's interest by calculating the sum of two quantities, q, the "intrinsic quality" of the object and f, the "topical interest" of the user in the object. (Herz at col. 18, ll. 49-55.) Thus, the user interest in the unevaluated object is given by: *user interest = q + f*. Each of these quantities is assumed to vary with user and to vary with target object. The intrinsic quality, q, takes into account that a given target object is expected to have an intrinsic nature that makes it more (or less) interesting to users generally. (Herz at col. 18, ll. 49-55; Figure 12 at steps **1201-1203**.) The topical interest, f, takes into account that the interest of a particular user for the target object may vary from the general interest reflected in the quantity q. The Herz system estimates f for the unevaluated target object by interpolating from the f values determined for ***other target objects that have been evaluated*** (i.e. for which relevance feedback exists) weighted by the similarity between the unevaluated object and the evaluated objects. (Herz at col. 19, l. 18 – col. 20, l. 55; Figure 12 at steps **1204-1205**.) Furthermore, Herz's estimation of an f value for a particular user for an unevaluated target object relies on relevance feedback from ***all users***, not just the particular user of interest. (*Id.* at col. 19, ll. 18-42.) Indeed, this point is emphasized in Step 1205 of Figure 12, which is relied on by the Examiner. (*Id.* at Fig. 12, Step 1205: "Compute Topical Interest Of Target Object For Selected User Based On Relevance Feedback From All Users"). The topical interest is ***not*** calculated by evaluating the difference between the relevance feedback for a particular user for the target object and the relevance feedback from a population of users for that target object. Instead, an interpolation is done on the function $f(V,Y)$, which takes into account the f value for ***all*** evaluated objects (V) and for ***all*** users (Y). (*Id.* at col. 19, ll. 34-42.)

To summarize, the Herz system uses two distinct approaches to determining an individual user's predicted interest in a target object. When the user has evaluated the object, the user's interest is directly assessed from the user's relevance feedback, with no analysis of the general population's interest in the object. When the user has not evaluated the object, the user's interest is estimated from an interpolation that considers the expressed interests of all users in all objects (in the form of relevance feedback), with no analysis of the particular individual's historical interest in the object (which is, of course, nonexistent). In neither case is a differencing carried out between history scores of an individual user and history scores of a population of users.

There is simply no teaching or suggestion in Herz of calculating a difference between (1) an individual user's history scores for a target object and (2) a population of user's history scores for that target object. To the contrary, Herz teaches that the individual user's historical relevance feedback for a target object, when available, is *by itself* the most reliable information for assessing a user's interest in the target object. (*Id.* at col. 17, l. 29 – col. 18, l. 27.) It is only when this direct evidence of interest (the relevance feedback) is unavailable that Herz falls back on using an indirect approach (interpolation over all users and all objects) to estimate user interest in the target object. (*Id.* at col. 18, l. 28 – col. 20, l. 55.) In this latter situation, there is no history score for the individual user for that target object, and thus there can be no differencing of the individual's (nonexistent) history score with a population of user's history scores.

The Examiner interprets the topical interest, *f*, of the Herz system as corresponding to the recited "relative preference scores reflecting a degree to which the user's predicted affinity for a category differs from the predicted affinity of the user population for that category" of the present invention. Applicant respectfully disagrees. First, Claim 1 expressly recites that the relative preference profile is generated by "evaluating differences between the individual user history scores and the collective user history scores." As discussed above, Herz never evaluates differences between individual history scores and collective history scores. Second, Claim 1 expressly recites that the relative preference profile predicts "affinity for a *category*." The topical interest, *f*, reflects interest in target *objects*, not interest in categories. Herz does disclose grouping objects into "clusters," (Herz at col. 65, ll. 9-56) and also discloses assessing user interest in clusters (*id.* at col. 69, ll. 33-28). Herz makes clear, however, that this assessment is made by measuring how often the user accesses target objects in the cluster (i.e. from relevance feedback from the user) or by predicting user interest "using the methods disclosed herein for estimating interest from relevance feedback." (*Id.* at col. 69, ll. 25-28.) As discussed at length above, those methods do not disclose or suggest evaluating differences between individual user history scores and collective user history scores.

At the interview, the Examiners pointed to additional disclosure in Herz to support the obviousness rejection, including col. 19, ll. 49-55, col. 70, ll. 6-9, and col. 74, ll. 48-51. However, none of the cited portions disclose "evaluating differences between the individual user

history scores and the collective user history scores to generate a relative preference profile for the user, wherein the relative preference profile comprises relative preference scores for specific item categories, said relative preference scores reflecting a degree to which the user's predicted affinity for a category differs from the predicted affinity of the user population for that category."

The portion of Herz at col. 19 cited by the Examiners observes that a user's interest in a target object may change over time and may vary with mood. Accordingly, Herz discloses that different estimates of topical interest may be weighed differently depending upon the time they are generated. The excerpt does not disclose evaluating differences between individual user history scores and collective user history scores, nor does it address predicting the affinity of a category of objects. The portion of Herz at col. 70 cited by the Examiners discloses that interesting "clusters" of objects may be identified using relevance feedback, and that a user may provide "temporary relevance feedback" to indicate a temporary interest that is added to his or her usual interests. The excerpt does not disclose evaluating differences between individual user history scores and collective user history scores. The portion of Herz at col. 74 cited by the Examiners discloses that people have varying complex interests, and that it is desirable to automatically locate groups of people with common interests to form virtual communities. The excerpt does not disclose evaluating differences between individual user history scores and collective user history scores, nor does it address predicting the affinity of a category of objects.

Claims 2-10 each depend directly or indirectly from independent Claim 11 and are not obvious over Ortega in view of Herz for at least the same reasons as provided above for Claim 1. Accordingly, Applicant respectfully requests that the Examiner withdraw the obvious rejections of Claims 2-10 based on the combination of Ortega and Herz.

2.   Rejection of Claims 15 and 16

The obviousness rejections of Claims 15 and 16 based on the applied references Ortega and Herz are improper because that combination of references does not disclose or suggest each and ever limitation of those claims.

Regarding Claim 15, the Examiner concedes that Ortega does not teach "an analysis module which analyzes at least the item selection histories to predict user affinities for specific item categories of the browse tree, wherein the analysis module additionally generates a relative preference profile for a given user by calculating differences between the user's predicted

-7-

affinities for specific item categories of the browse tree and the population's predicted affinities for said item categories." (Office Action at 7.) However, the Examiner asserts that this limitation is taught by Herz relying on the same disclosures discussed above in connection with Claim 1. Applicant respectfully disagrees.

As discussed at length above, there is no teaching or suggestion in Herz of calculating a difference between (1) an individual user's predicted affinities for specific objects (or categories of objects) and (2) a population of user's predicted affinities for the objects (or categories). Accordingly, Herz does not teach or suggest "an analysis module which analyzes at least the item selection histories to predict user affinities for specific item categories of the browse tree, wherein the analysis module additionally generates a relative preference profile for a given user by calculating differences between the user's predicted affinities for specific item categories of the browse tree and the population's predicted affinities for said item categories" as required by Claim 15.

Claim 16 depends directly from independent Claim 15 and is not obvious over Ortega in view of Herz for at least the same reasons as provided above for Claim 15. Accordingly, Applicant respectfully requests that the Examiner withdraw the obvious rejections of Claims 15 and 16 based on the combination of Ortega and Herz.

C.   103(a) Rejection of Claims 2, 3 and 16 Over Ortega In View Of Herz And Ford

In the Office Action mailed October 11, 2006 ("Office Action"), the Examiner rejected Claims 2, 3 and 16 under 35 U.S.C. § 103(a) as being obvious over Ortega in view of Herz and Ford. (Office Action at 8.) Applicant respectfully submits that each of these claims is allowable over the combination of Ortega, Herz, and Ford.

Regarding Claims 2 and 3, as discussed at length above, neither Ortega or Herz teaches or suggests "evaluating differences between the individual user history scores and the collective user history scores to generate a relative preference profile for the user, wherein the relative preference profile comprises relative preference scores for specific item categories, said relative preference scores reflecting a degree to which the user's predicted affinity for a category differs from the predicted affinity of the user population for that category." Ford does not teach or suggest this missing limitation, and the Examiner does not assert otherwise. For at least this reason, Claims 2 and 3 are not obvious over the combination of Ortega, Herz, and Ford.

Regarding Claim 16, as discussed at length above, neither Ortega or Herz teaches or suggests "an analysis module which analyzes at least the item selection histories to predict user affinities for specific item categories of the browse tree, wherein the analysis module additionally generates a relative preference profile for a given user by calculating differences between the user's predicted affinities for specific item categories of the browse tree and the population's predicted affinities for said item categories." Ford does not teach or suggest this missing limitation, and the Examiner does not assert otherwise. For at least this reason, Claim 16 is not obvious over the combination of Ortega, Herz, and Ford.

D.   **Conclusion**

In view of the foregoing remarks, Applicant submits that Claims 1-16 are each patentably distinct from the applied references, and requests that the rejections of these claims be withdrawn.

Applicant reserves the right to swear behind any applied references as appropriate in response to a subsequent Office Action.

If any issues remain in the present application, the Examiner is requested to call the undersigned representative at his direct dial number of 949-721-6334.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 11 January 2007

By: _____
David G. Jankowski
Registration No. 43,691
Attorney of Record
Customer No. 20,995
(949) 760-0404

3023257/dns
010307

-9-